

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claims 1-24 (canceled)

1 **Claim 25 (currently amended):** A process for measuring
2 three-dimensional objects in a three-dimensional
3 environment, comprising the steps of:
4 taking at least one image of said environment by at
5 least one camera;
6 detecting discontinuities of appearance in the image;
7 relating said discontinuities with geometric contours,
8 said contours having positions and shapes in the image
9 which are defined by parameters including numerals;
10 matching said geometric contours with said
11 discontinuities by adjusting said parameters;
12 numerically relating said geometric contours with
13 geometric objects in the three-dimensional environment,
14 three-dimensional positions and volume shapes of said
15 geometric objects in the three-dimensional environment
16 being defined by three-dimensional parameters including
17 numerals;
18 estimating said three-dimensional positions and volume
19 shapes of said geometric objects in the three-dimensional
20 environment in computing geometric projections of said
21 geometric objects onto said at least one image according to

22 a match between said projection and said geometric
23 contours; and,
24 creating a representation of the three-dimensional
25 environment, said representation comprising said geometric
26 objects, according to the parameters defining the positions
27 and shapes of said geometric objects.

1 **Claim 26 (previously presented):** The process
2 according to claim 25, characterized in that the geometric
3 contours include dots, straight lines, ellipses, and the
4 objects include circles, cylinders, straight lines and
5 dots.

1 **Claim 27 (previously presented):** The process
2 according to claim 26, characterized in that the parameters
3 include plane Cartesian coordinates, angles and lengths.

1 **Claim 28 (currently amended):** The process according
2 to claim 25, characterized in that said at least one image
3 [[in]]is converted into an image of a potential function
4 computed on pixels of said at least one image, the
5 potential function giving extreme values at said
6 discontinuities.

1 **Claim 29 (previously presented):** The process
2 according to claim 28, characterized in that the potential
3 function includes a term taking account of areas with very
4 low intensity of gray on the images.

1 **Claim 30 (previously presented):** The process,
2 according to claim 25, wherein said representation
3 comprises a position of said at least one camera.

1 **Claim 31 (previously presented):** The process
2 according to claim 30, wherein said geometric projections
3 are determined from the position of said camera and
4 positions of said geometric objects in the representation.

1 **Claim 32 (previously presented):** The process
2 according to claim 25, wherein the representation initially
3 comprises information on at least the positions and shapes
4 of said geometric objects which is inputted manually or
5 from a computer description file, and the representation is
6 created in progressively amending said information so that
7 the match between the projection of said geometric objects
8 and said geometric contours of said at least one image is
9 improved.

1 **Claim 33 (currently amended):** The process according
2 to claim 25, wherein a plurality of said images is taken,
3 and said representation of the three dimensional
4 environment is amended in repeating the process for each of
5 said images using numerical adjustment of the parameter.

1 **Claim 34 (previously presented):** The process
2 according to claim 33, wherein said representation of the
3 three-dimensional environment is amended in amending the
4 positions and shapes of said geometric objects for each of
5 said images.

1 **Claim 35 (currently amended):** The process according
2 to claim 33, wherein said representation of the
3 three-dimensional environment is amended in including said
4 geometric objects into and camera position said
5 representation and in repeating the process for different
6 ones of said images.

1 **Claim 36 (new):** The process according to claim 33,
2 wherein a geometric projection of the contour of the three-
3 dimensional object is performed on each new image before
4 detecting discontinuities of appearance in the new image.

1 **Claim 37 (new):** The process according to claim 35,
2 wherein said projected contours are adjusted relatively to
3 the image discontinuities.